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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/821,136	03/30/2001	Daoben Li	LKAR04US	5254

7590 03/28/2005

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EXAMINER	
LE, AMANDA T	

ART UNIT	PAPER NUMBER
2634	

DATE MAILED: 03/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/821,136	LI, DAOBEN	
	Examiner	Art Unit	
	Amanda T Le	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 March 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 March 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/31/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Song et al (6,526,037).

Song et al discloses CDMA receiver (Fig. 1) comprising the following claimed limitations: a spread-spectrum source having a spread-spectrum signal (Fig. 1, signals received by receiving antenna) and receiver-code means (Fig. 1, CDMA demodulator), "a receiver-code generator" (Fig. 1, circuits for generating code 1-code N), "a mixer" (Fig. 1), for spread-spectrum processing the spread-spectrum signal with a particular code-division-multiple-access (CDMA) code from a plurality window, with an auto-correlation function, within the zero of CDMA code, having a zero correlation correlation window (Fig. 2, $0\text{-}N_b^2$, Fig. 3, $0\text{-}N_b$), having a value of zero except at an origin (Fig. 2), and with a cross-correlation function of the particular CDMA code with other CDMA codes in the plurality within the zero correlation window, having a value of zero CDMA codes, everywhere inside the zero correlation window (Fig. 3).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davidovici (US 5,627,855) in view of Song et al.

Davidovici discloses a RAKE receiver (Fig. 1) comprising the following claimed limitations: "a spread-spectrum source" (SIGNAL INPUT), "receiver-memory means coupled to said spread-spectrum source, responsive to the particular CDMA code embedded in the spread-spectrum signal, for storing a plurality of symbols, and for outputting a particular symbol of a plurality of symbols from said receiver-memory means" (35, 37, 46, col. 8, lines 28-62), "a matched filter having an impulse response function matched to the particular CDMA code, responsive to detecting the particular CDMA code, for outputting a particular symbol of a plurality of symbols" (35, 37). Davidovici fails to disclose that the code being "from a plurality window, with an auto-correlation function, within the zero of CDMA code, having a zero correlation correlation window having a value of zero except at an origin, and with a cross-correlation function of the particular CDMA code with other CDMA codes in the plurality within the zero correlation window, having a value of zero CDMA codes, everywhere inside the zero correlation window".

Song et al discloses a method for allocating signature sequence in CDMA system which employs the code having the claimed characteristics (see Fig. 1, Fig. 2). It would have been

obvious to one having ordinary skill in the art at the time of the invention to modify Davidovici's receiver to enable the use of Song et al's code to achieve a system as claimed. Such modification would minimize interference among users by improving auto-correlation and cross-correlation characteristics of the sequence, as described in the Song et al reference.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1, 2, 5-48 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-47 of copending Application No. 10/151,912. Although the conflicting claims are not identical, they are not patentably distinct from each other. Omission of features whose functions are not needed in a particular design would have been obvious to one of ordinary skill in the art at the time of the invention.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

7. Claims 3 and 4 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Davidovici in view of claim 1 of copending Application No. 10/151,912.

This is a provisional obviousness-type double patenting rejection.

Davidovici discloses a RAKE receiver (Fig. 1) comprising the following claimed limitations: "a spread-spectrum source" (SIGNAL INPUT), "receiver-memory means coupled to said spread-spectrum source, responsive to the particular CDMA code embedded in the spread-spectrum signal, for storing a plurality of symbols, and for outputting a particular symbol of a plurality of symbols from said receiver-memory means" (35, 37, 46, col. 8, lines 28-62), "a matched filter having an impulse response function matched to the particular CDMA code, responsive to detecting the particular CDMA code, for outputting a particular symbol of a plurality of symbols" (35, 37). Davidovici fails to disclose that the code being "from a plurality window, with an auto-correlation function, within the zero of CDMA code, having a zero correlation correlation window having a value of zero except at an origin, and with a cross-correlation function of the particular CDMA code with other CDMA codes in the plurality within the zero correlation window, having a value of zero CDMA codes, everywhere inside the zero correlation window".

The co-pending claim discloses a CDMA system, which employs the code having the claimed characteristics (see Fig. 1, Fig. 2). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Davidovici's receiver to enable the use of the code described in the co-pending claim to achieve a system as claimed. Such modification

would minimize interference among users by improving auto-correlation and cross-correlation characteristics of the sequence.

Allowable Subject Matter

8. Claims 5-48 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims and the double patenting rejection(s) set forth in this Office action is overcome.

9. The following is a statement of reasons for the indication of allowable subject matter: Prior art of record, taken individually or collectively, fails to disclose" the CDMA codes that are generated by selecting a pair basically orthogonal complementary code group (C1, (C2, S2) with each code length having chips, which an auto-correlation function and cross-correlation functions of code (C1, C2) and code oppose each other but also complement each other except at the origin, the value of auto-correlation function and cross-correlation functions after summarization are zero except at the origin; and based on the actually required maximum number of subscriber accesses, spreading, based on the actually required maximum number of subscriber accesses, the code length and code number of the basically orthogonal complementary code group tree structure, the values of auto-correlation functions of the spread code group are zero except at the origin, while the cross-correlation functions form a zero correlation window the origin, with the window size at least 2N-1."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amanda T Le whose telephone number is (571) 272-3052.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Amanda Le

AMANDA T. LE
PRIMARY EXAMINER